

CLAIMS

What is claimed is:

1. A vessel comprising:

a pipe distributor at least partially enclosed by the vessel, and wherein the pipe distributor includes a plurality of openings;

5 an inclined fluid receiving surface positioned proximal to the pipe distributor, wherein the fluid receiving surface receives a liquid-containing fluid that exits through the plurality of openings;

wherein the liquid-containing fluid has a horizontal momentum in direction of pipe
10 flow when the fluid impinges on the fluid receiving surface; and

wherein the fluid receiving surface comprises a flow-impeding portion that reduces
the horizontal momentum of the fluid on the fluid receiving surface.

2. The vessel of claim 1 wherein the fluid impinges on the fluid receiving surface at an angle of 15 degrees to 60 degrees relative to a vertical axis of the vessel.

15 3. The vessel of claim 2 wherein the fluid receiving surface forms an angle of 0 degrees to 45 degrees relative to the vertical axis of the vessel.

4. The vessel of claim 3 wherein the fluid receiving surface comprises an impingement baffle.

5. The vessel of claim 3 wherein the fluid receiving surface comprises a wall of a
20 downcomer or false downcomer.

6. The vessel of claim 3 wherein the fluid is a feed, a pump-around, or a reflux to the vessel.

25 7. The vessel of claim 3 wherein the flow-impeding portion comprises a rib that is coupled to the fluid receiving surface substantially perpendicular to the horizontal momentum.

8. The vessel of claim 3 wherein the flow-impeding portion comprises an indentation in the fluid receiving surface substantially perpendicular to the horizontal momentum.
9. The vessel of claim 3 wherein the flow-impeding portion comprises a plurality of ordered or randomly arranged protrusions from the fluid receiving surface.
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10. The vessel of claim 1 wherein the vessel is a distillation, absorption, quench, or wash vessel.
11. A method of improving fluid distribution in a vessel comprising:
positioning an inclined fluid receiving surface below a pipe distributor, wherein the
10 fluid receiving surface receives a liquid-containing fluid that exits through a plurality of openings in the pipe distributor;
wherein the liquid-containing fluid has a horizontal momentum in direction of pipe flow when the fluid impinges on the fluid receiving surface; and
including a flow-impeding portion in the fluid receiving surface such that the flow-
15 impeding portion reduces the horizontal momentum of the fluid on the fluid receiving surface.
12. The method of claim 11 wherein the fluid impinges on the fluid receiving surface at an angle of 15 degrees to 60 degrees relative to a vertical axis of the vessel.
13. The method of claim 12 wherein the fluid receiving surface forms an angle of 0
20 degrees to 45 degrees relative to the vertical axis of the vessel.
14. The method of claim 13 wherein the flow-impeding portion comprises a rib that is coupled to the fluid receiving surface substantially perpendicular to the horizontal momentum.
15. The method of claim 13 wherein the flow-impeding portion comprises an indentation in the fluid receiving surface substantially perpendicular to the horizontal momentum.
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16. The method of claim 13 wherein the flow-impeding portion comprises a plurality of ordered or randomly arranged protrusions from the fluid receiving surface.